

ABSTRACT**TWO-DIMENSIONAL RADIATION AND NEUTRON IMAGE DETECTORS**

A ^6Li doped glass scintillator sheet with grooves cut at given spacings in horizontal and vertical directions. Bundles of wavelength shifting fibers placed in the vertical grooves and fluorescence reflector buried in the horizontal grooves make a group of detection pixels. Neutron detecting media are provided on the top surface and bundles of wavelength shifting fibers are arranged horizontally on the bottom surface of the scintillator. Fluorescence generated by stimulation with the neutrons entering the detection pixels and with the neutrons incident on the neutron detecting media are detected by the wavelength shifting fibers. The detected fluorescence is converted to electric signals with a multi-channel photomultiplier tube, with pulse signals for simultaneous counting generated from a retriggerable, constant time-duration pulse generator and recorded as time-series data by parallel interfaces. The recorded data are analyzed by the simultaneous counting method to produce a two-dimensional neutron image.